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4. (original) A multichamber microdialysis device according claim 1, wherein the fixing part (21) is shaped as a circumferential fixing ring (22) for fixing one semipermeable membrane (9) each.

5. (original) A multichamber microdialysis device according to claim 4, wherein the wall thickness (d) of the fixing ring (22), measured in radial direction, is at most 1.5 mm, preferably at most 1 mm.

6. (original) A multichamber microdialysis device according to claim 1, wherein at least a part of the sample chambers (7) are in contact to a common dialysate chamber (31) via their respective exchange openings.

7. (currently amended) A multichamber microdialysis device according to claim [4] 6, wherein the membranes (9) of the sample chambers (7) which are in liquid exchange contact to a common dialysate chamber (31), are fixed by means of a common fixing part (33).

8. (original) A multichamber microdialysis device according to claim 1, wherein the semipermeable membrane (9) contains cellulose acetate and/or regenerated cellulose.

9. (original) A multichamber microdialysis device according to claim 1, wherein the device comprises at least 8 sample chambers (7).

10. (original) A multichamber microdialysis device according to claim 1, wherein the device comprises at least 48 sample chambers (7).

11. (currently amended) A multichamber microdialysis device according to claim 1, wherein the device comprises at least [98] 96 sample chambers (7).

12. (new) A multichamber microdialysis device according to claim 1, characterized in that it comprises input openings at its upper side arranged with a center distance of 9 mm.

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1. (original) A multichamber microdialysis device with a plurality of sample chambers in close side by side arrangement, surrounded by circumferential side walls (15), respectively, for taking up liquid samples, and

at least one dialysate chamber (8) for taking up a dialysate liquid,

wherein the sample chambers (7) are in liquid exchange contact to an adjacent dialysate chamber (8) via an exchange opening (10) covered by a semipermeable membrane (9), and wherein the membrane (9) is fixed liquid-tight to the side walls (15) of the sample chamber (7), in such a manner that a diffusion exchange between the sample chamber (7) and the neighboring dialysate chamber (8,31) through the membrane is only possible for molecules with a molecular weight below the molecular cut-off of the semipermeable membrane (9),

wherein

the semipermeable membrane (9) is fixed by clamping between the front face (20) of the circumferential side wall of the sample chamber and a fixing part (21), wherein the front face (20) of the side wall (15) and the fixing part (21,33) each comprise a ring-shaped circumferential mounting region (23,24) contacting a peripheral marginal section of the membrane (9); and that one of the mounting regions (23) comprises a circumferential groove (26) and the other circumferential region (24) comprises a protruding rib (27) fitting into the groove (26), by which the membrane (9) is pressed into the groove (26) at its peripheral marginal section which is clamped between the mounting regions (23,24).

2. (original) A multichamber microdialysis device according to claim 1, wherein the exchange surface area (28) of the membrane is smaller than 50 mm^2.

3. (original) A multichamber microdialysis device according to claim 1, wherein at least a part of the sample chambers (7) are each in liquid exchange contact to a single dialysate chamber (8) via their exchange openings (10), which single dialysate chamber (8) is not in liquid exchange contact to any other sample chamber.